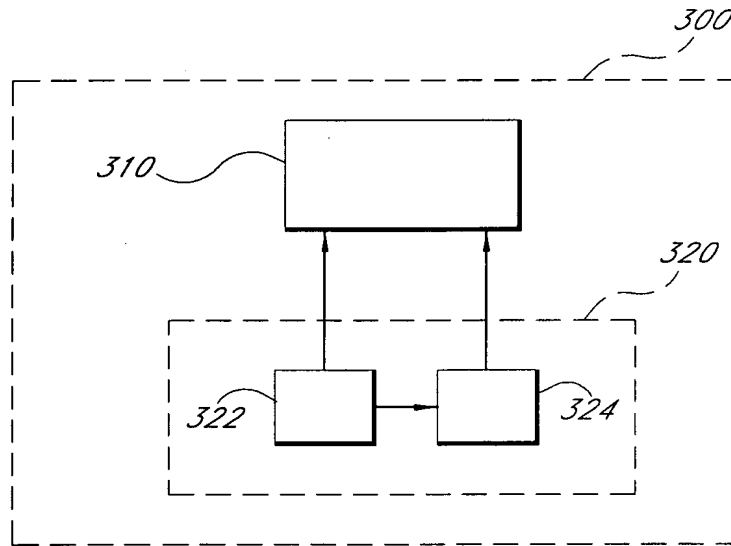


FIG. 1



*FIG. 2*

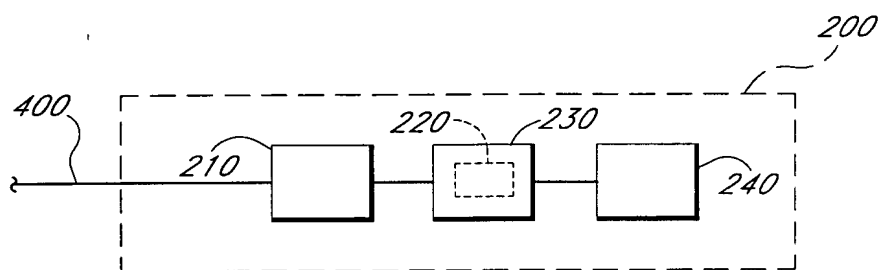


FIG. 3A

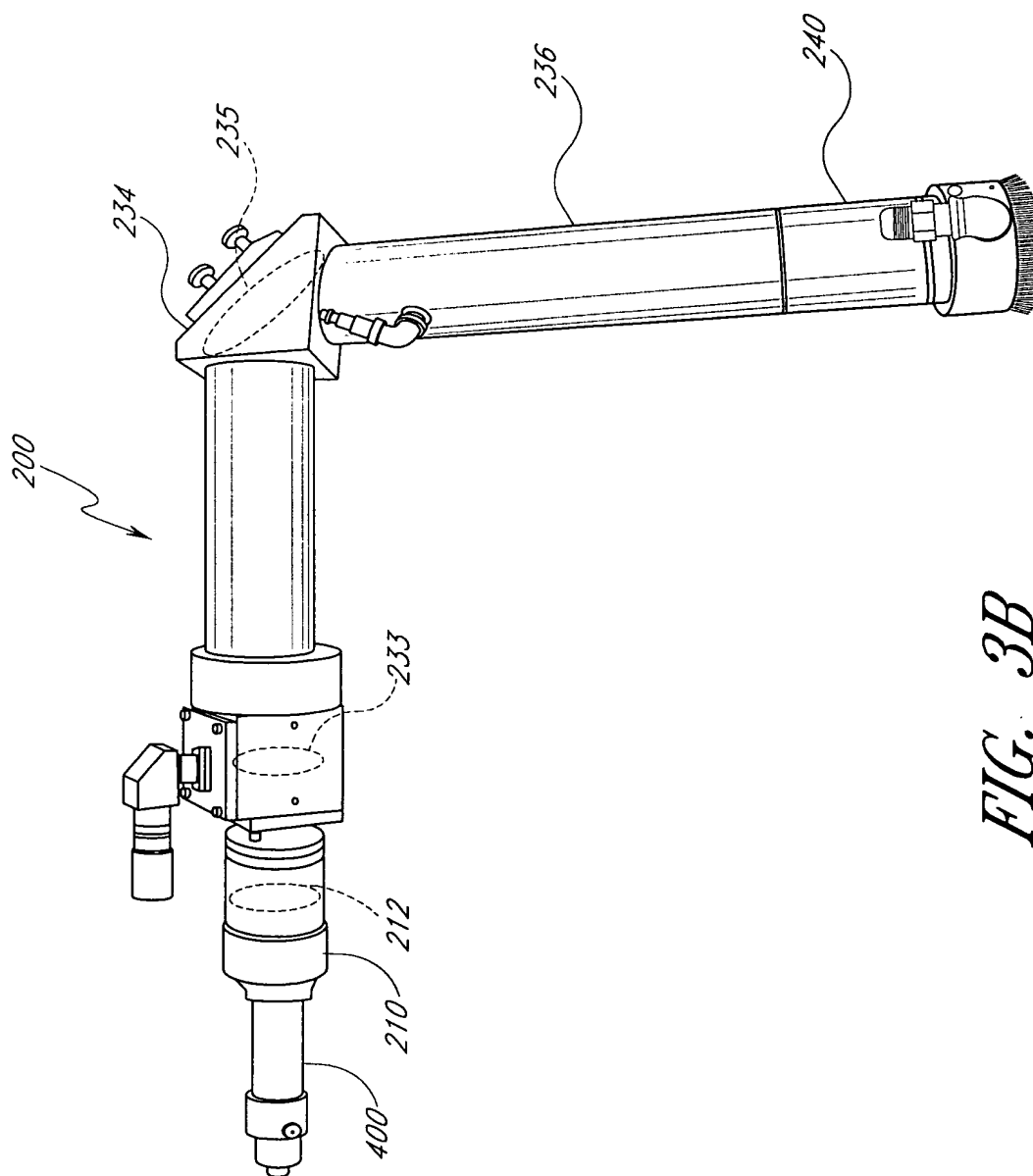


FIG. 3B

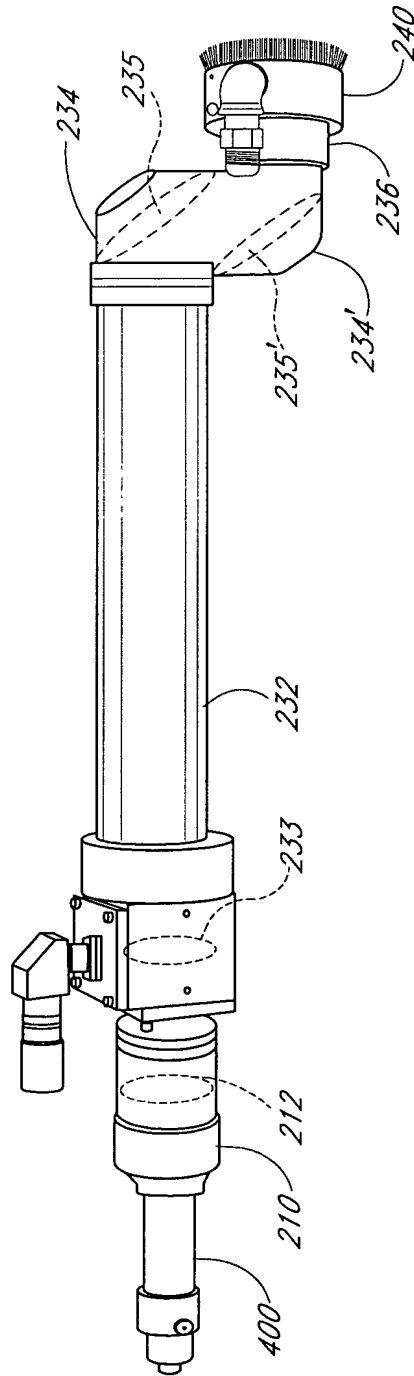


FIG. 3C

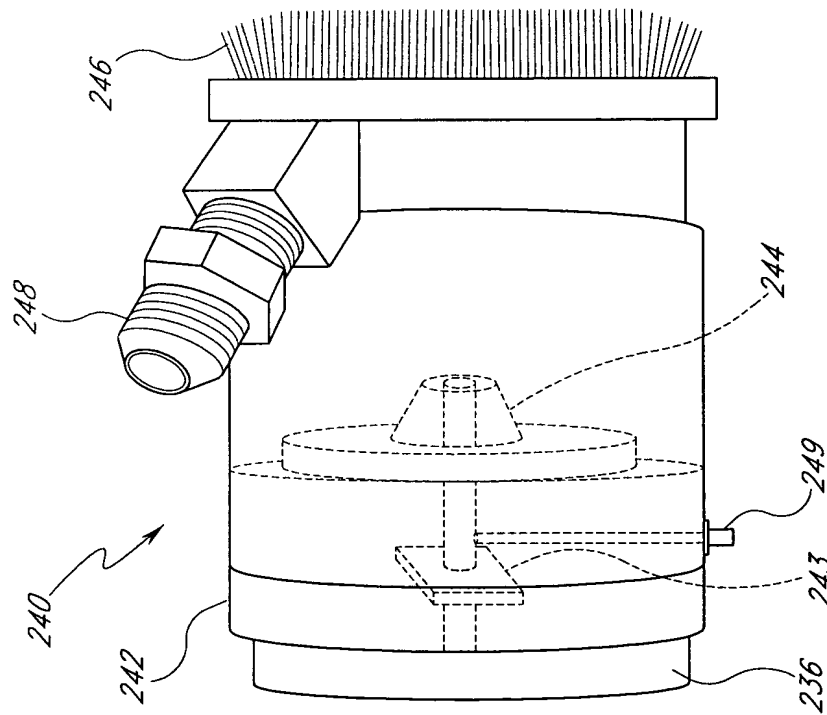
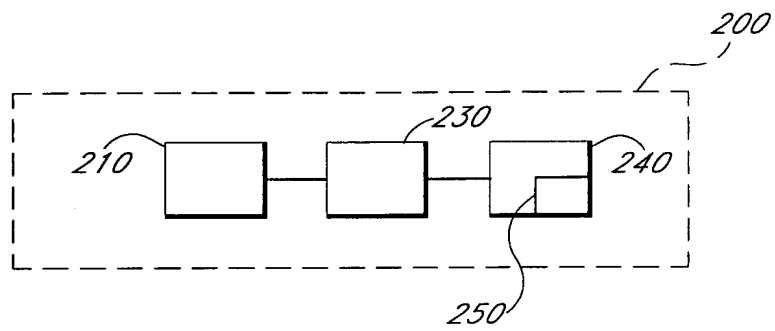


FIG. 4



*FIG. 5*

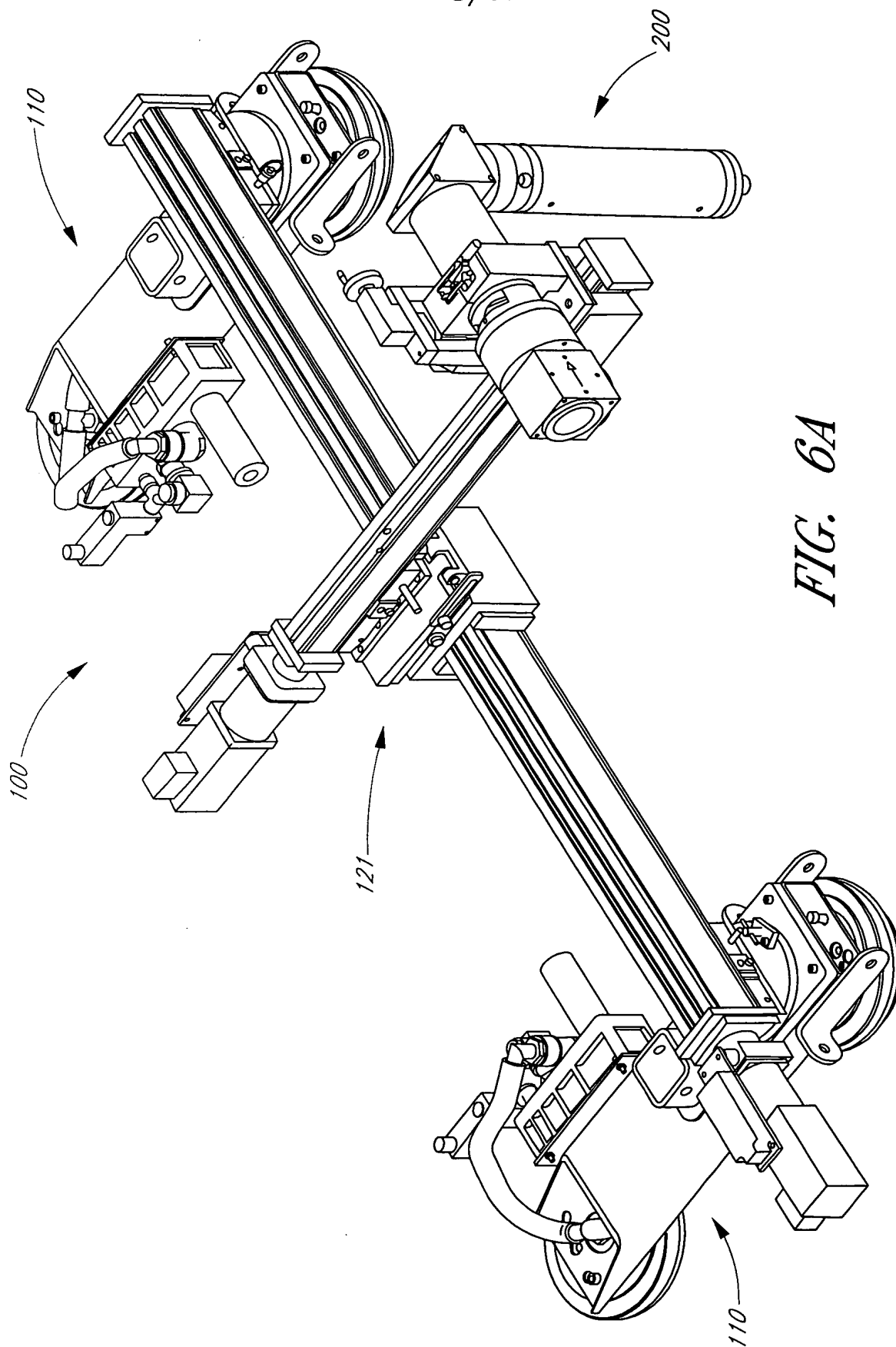
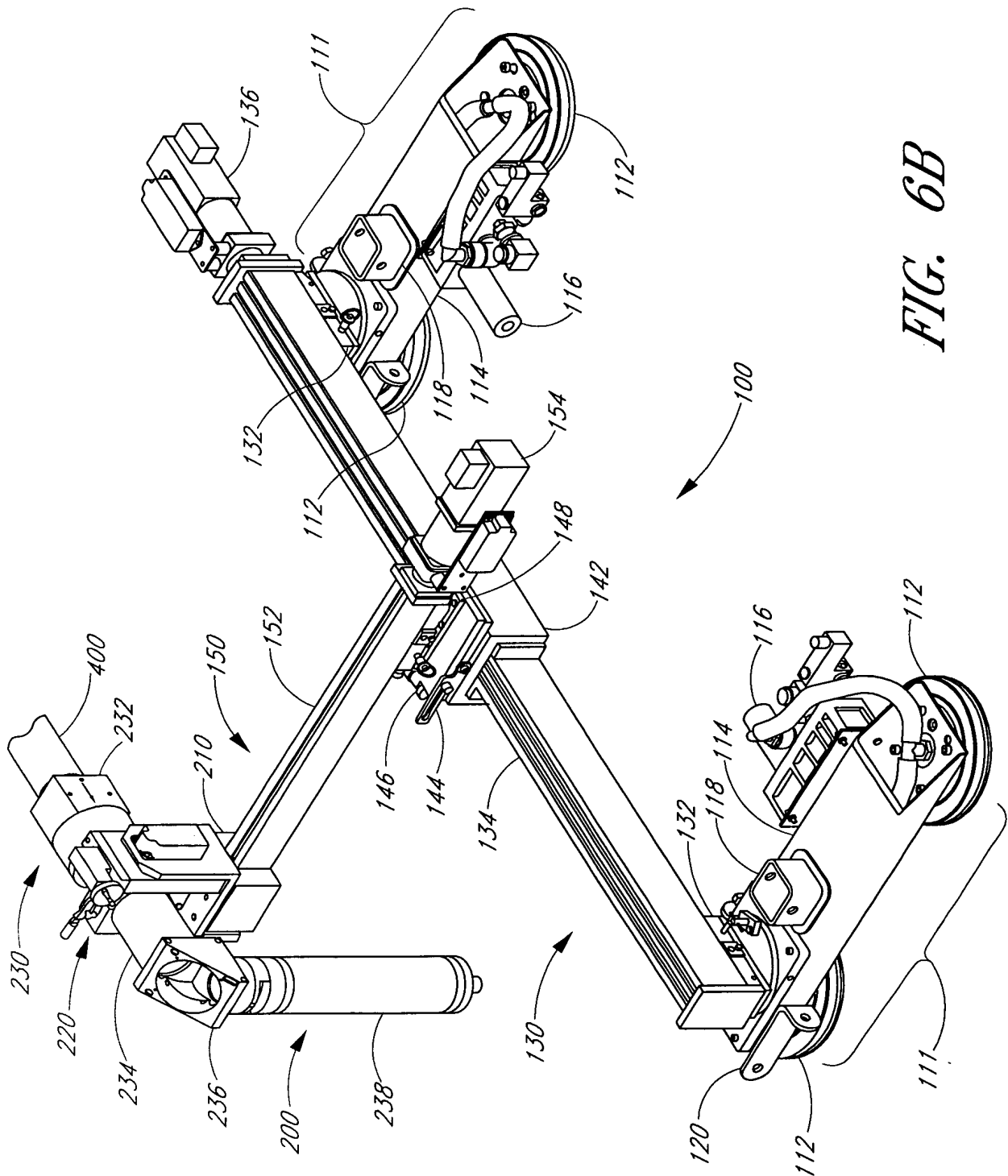
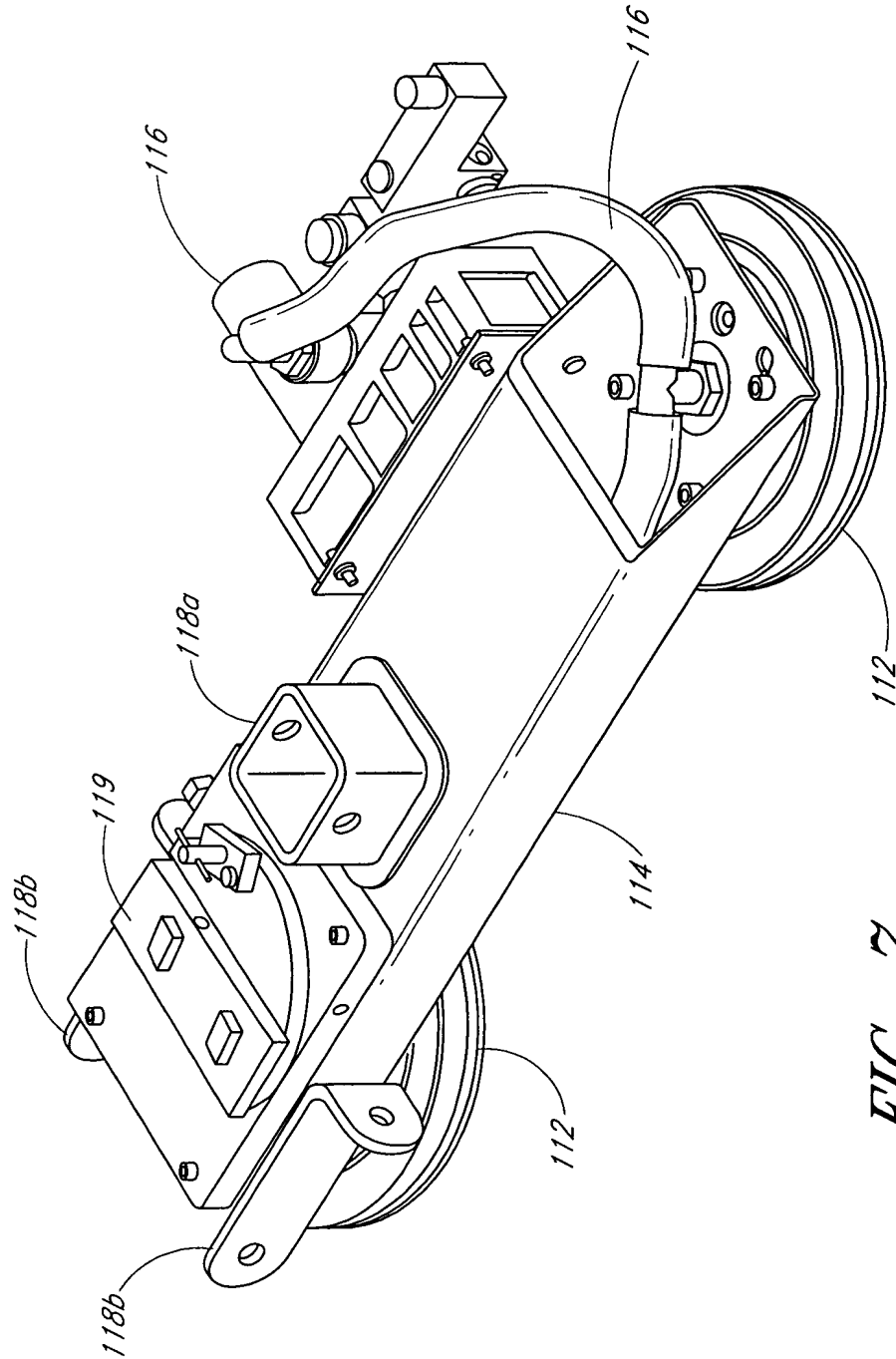


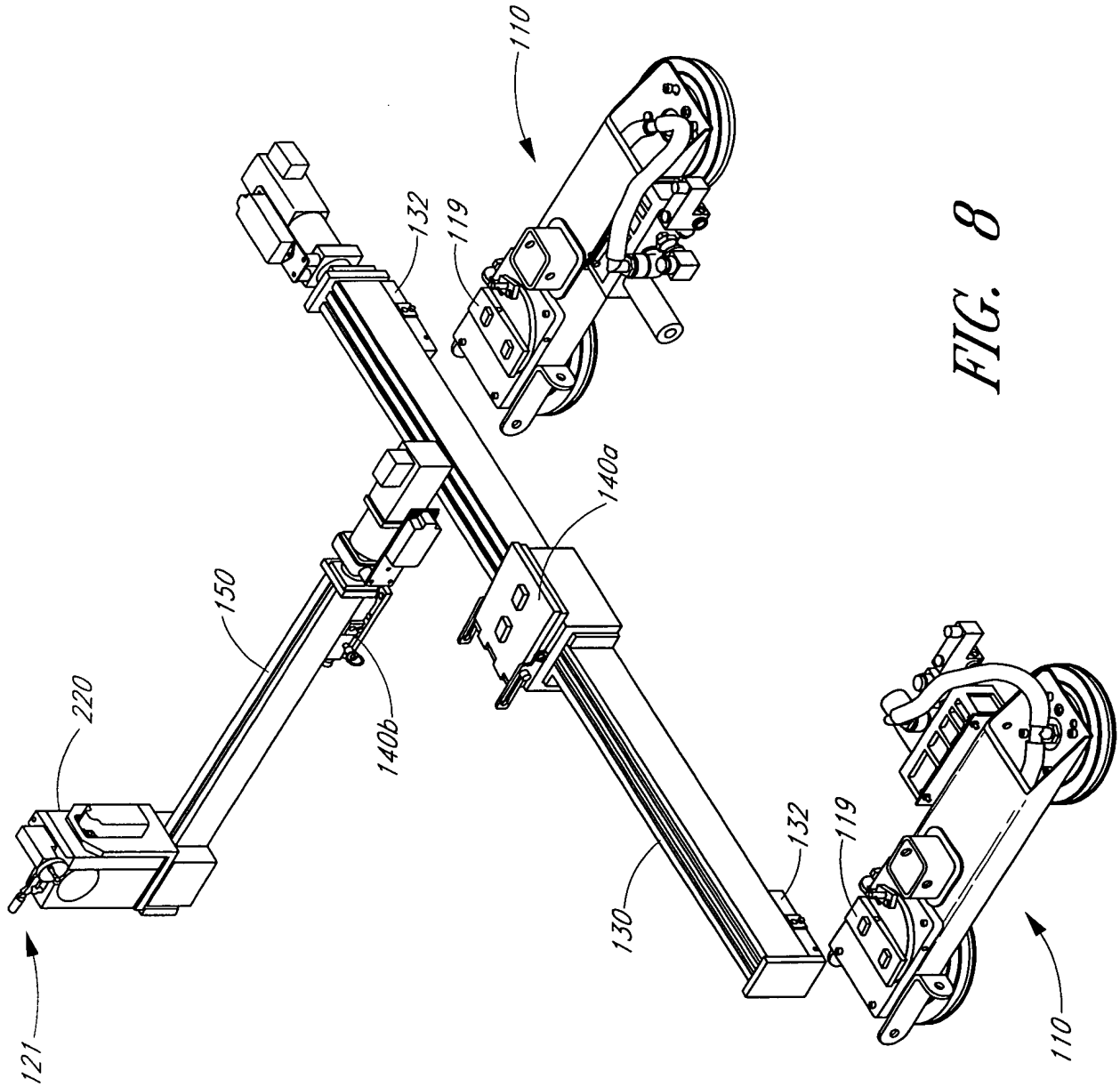
FIG. 6A





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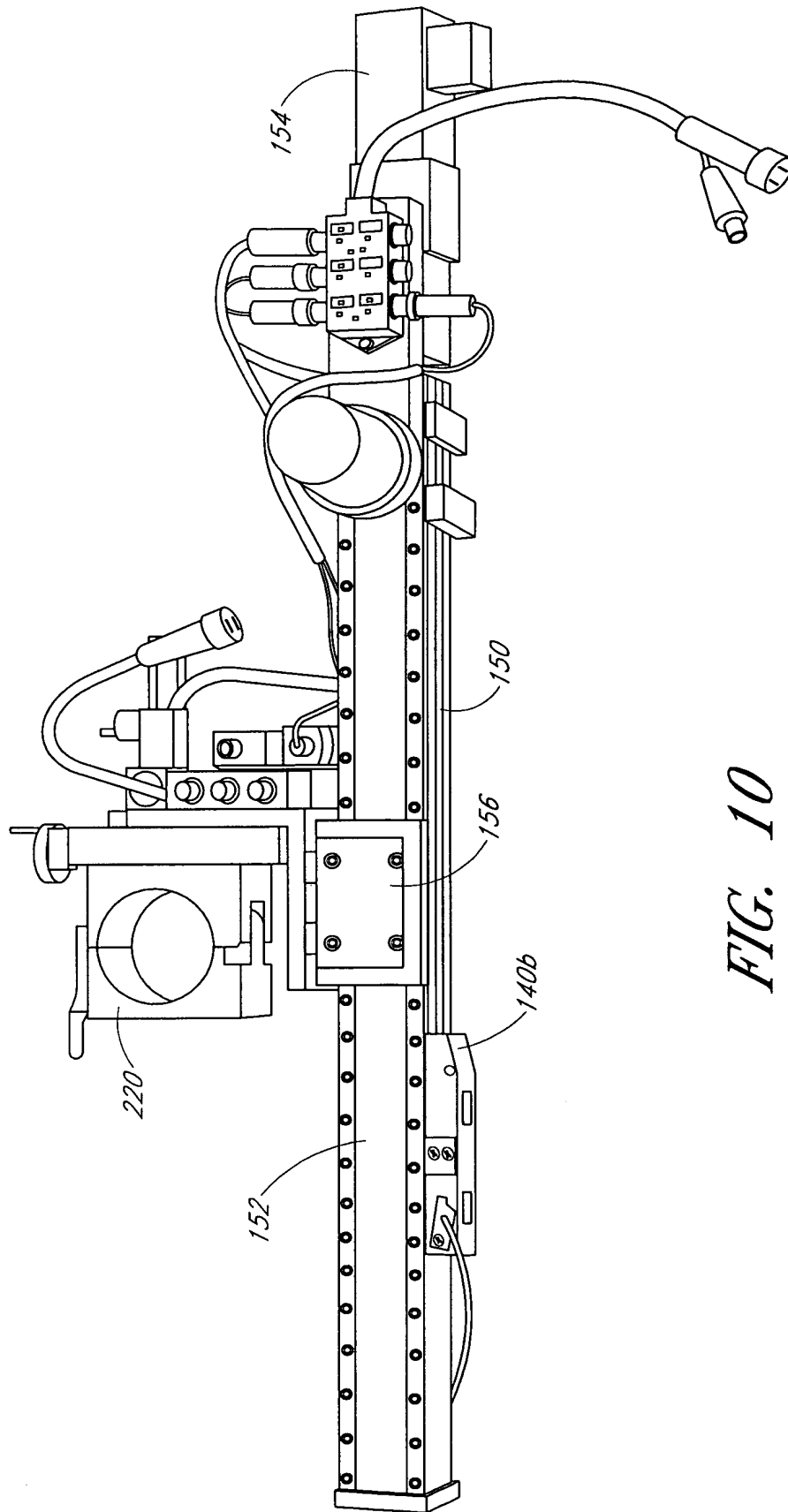
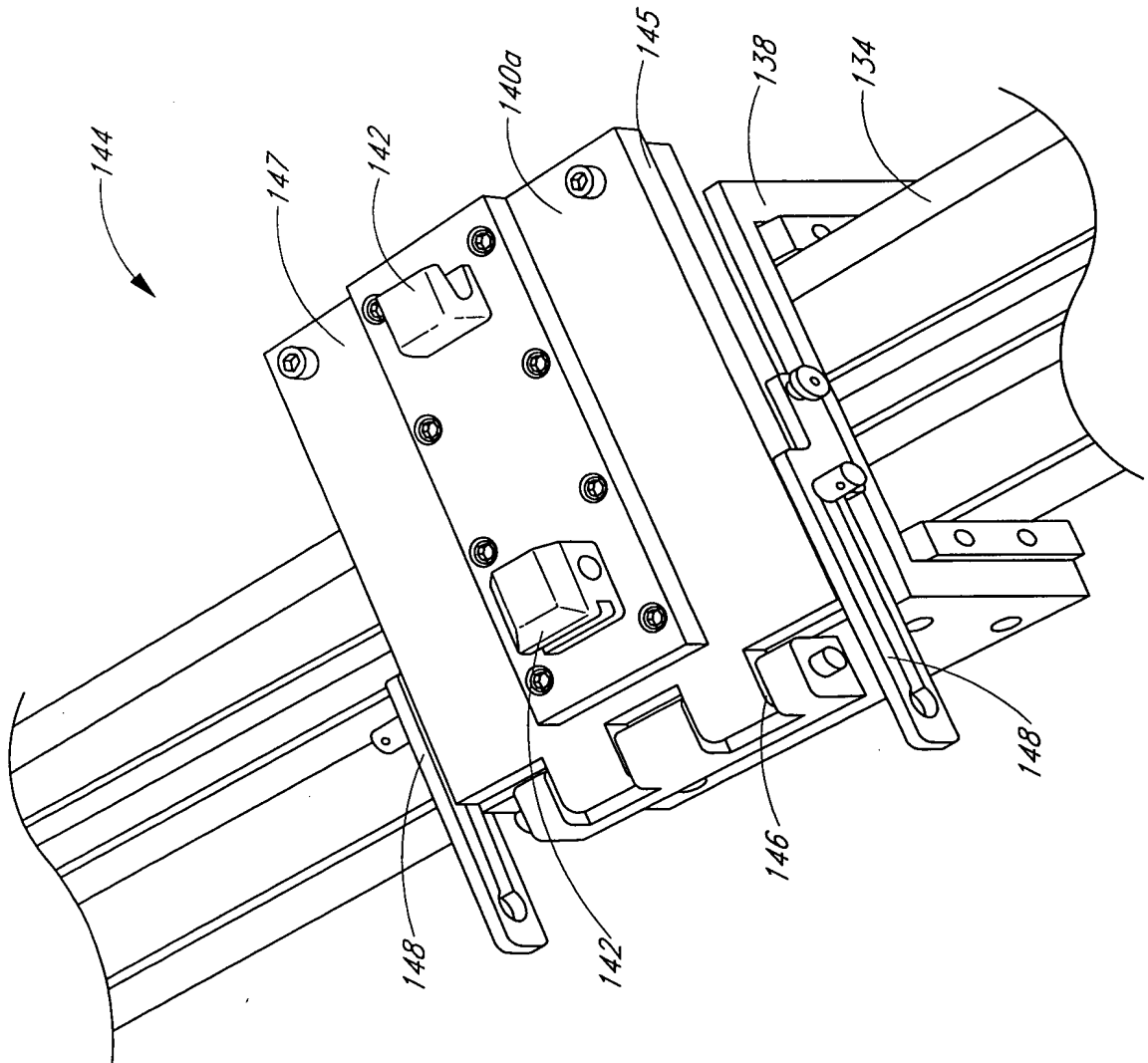
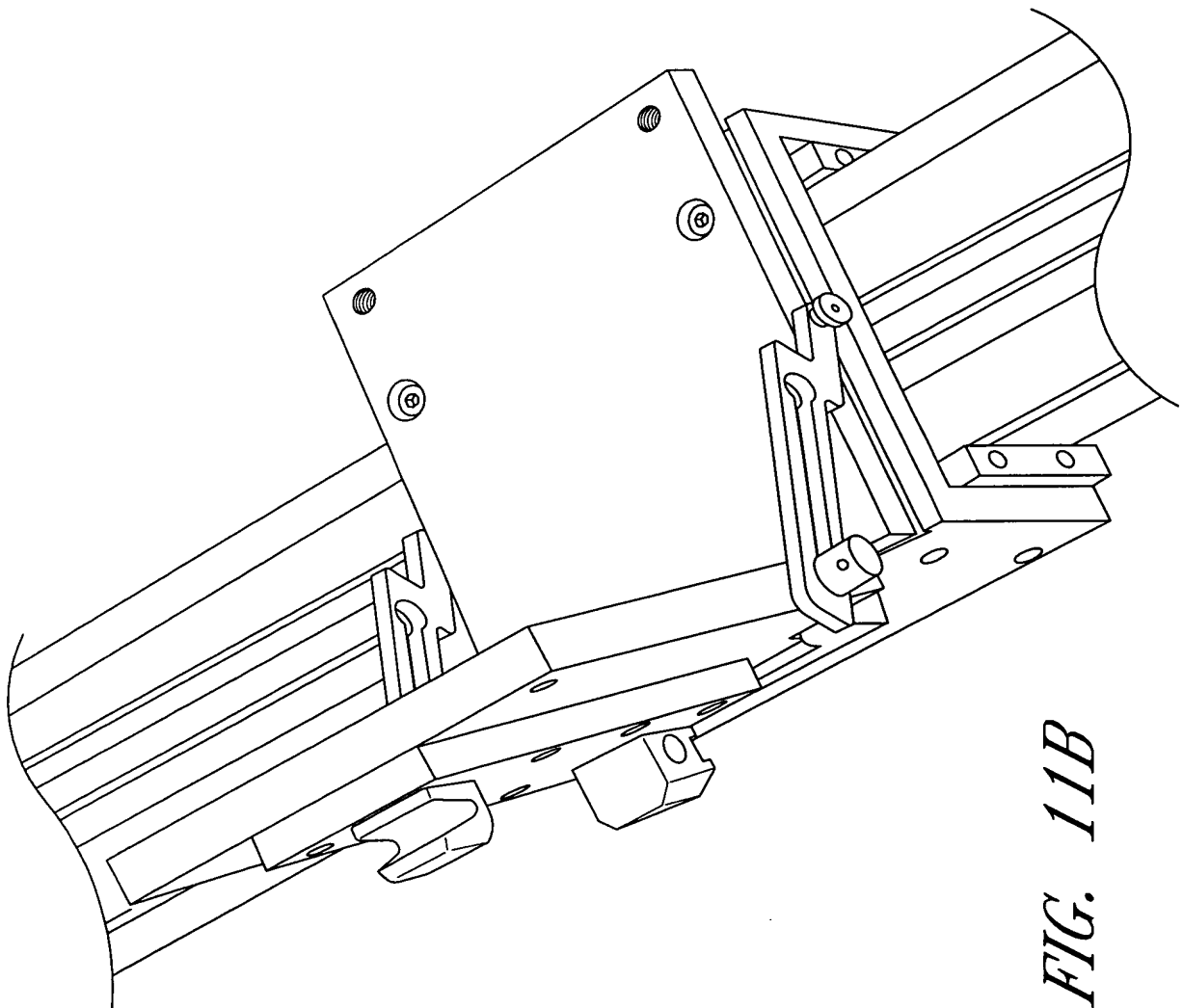


FIG. 10



**FIG. 11A**



*FIG. 11B*

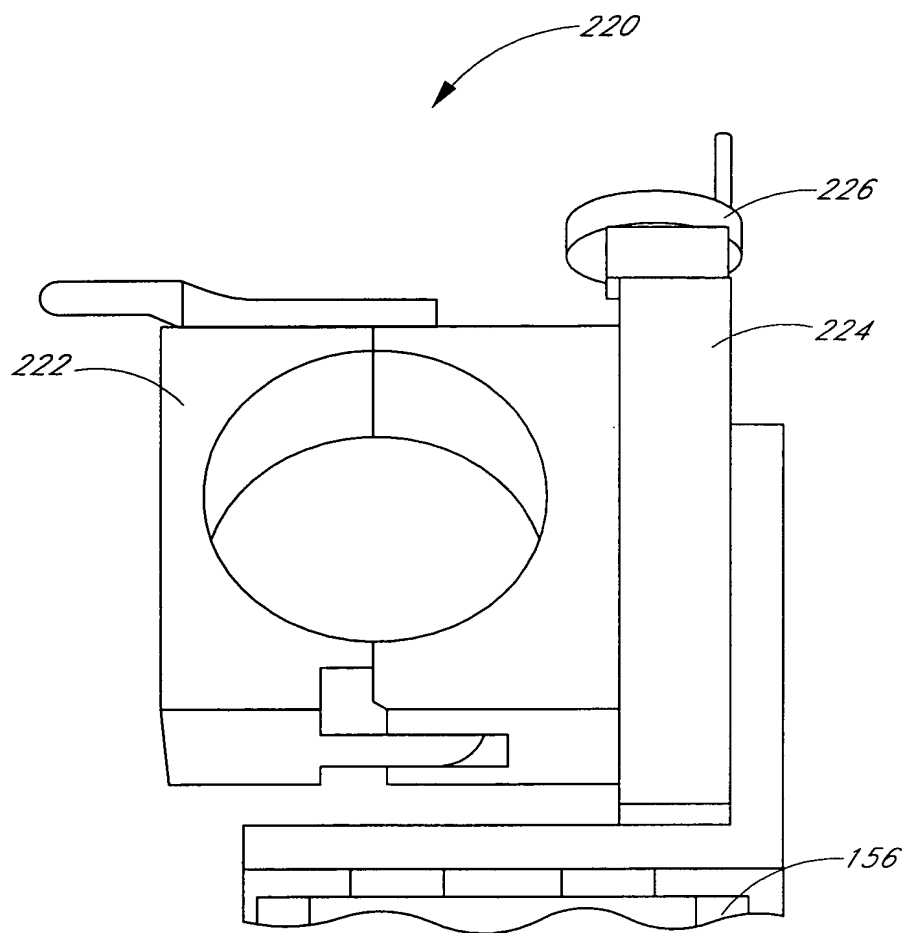
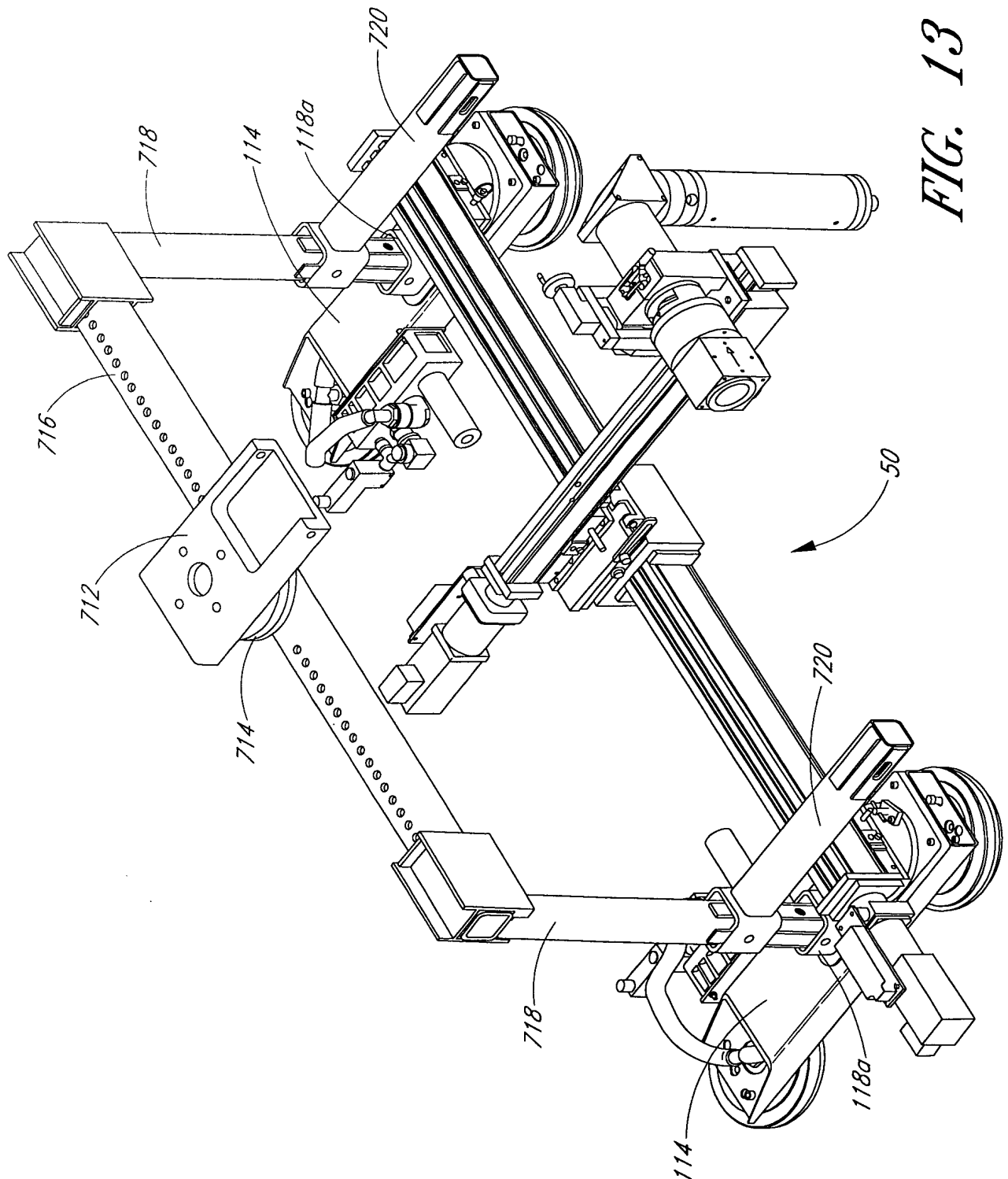


FIG. 12





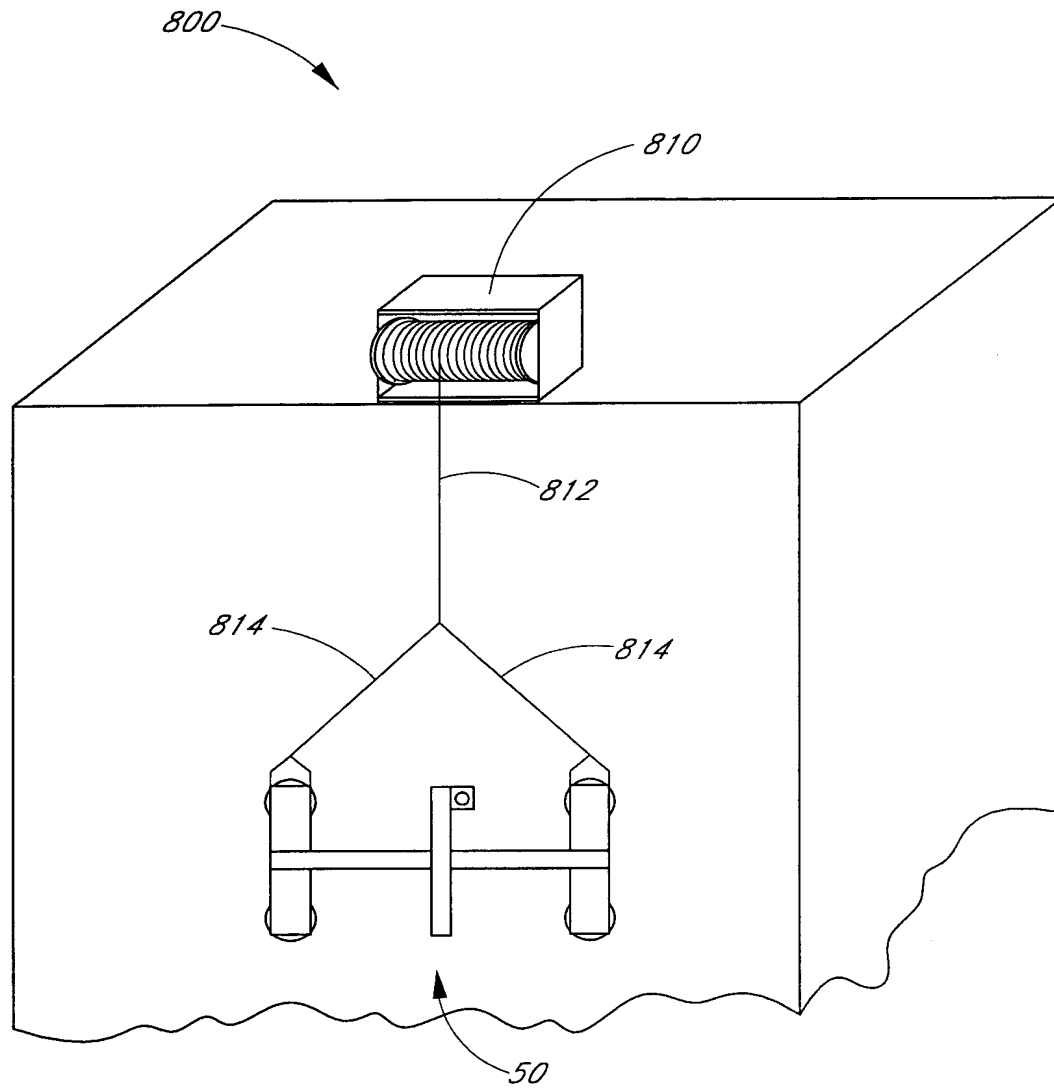
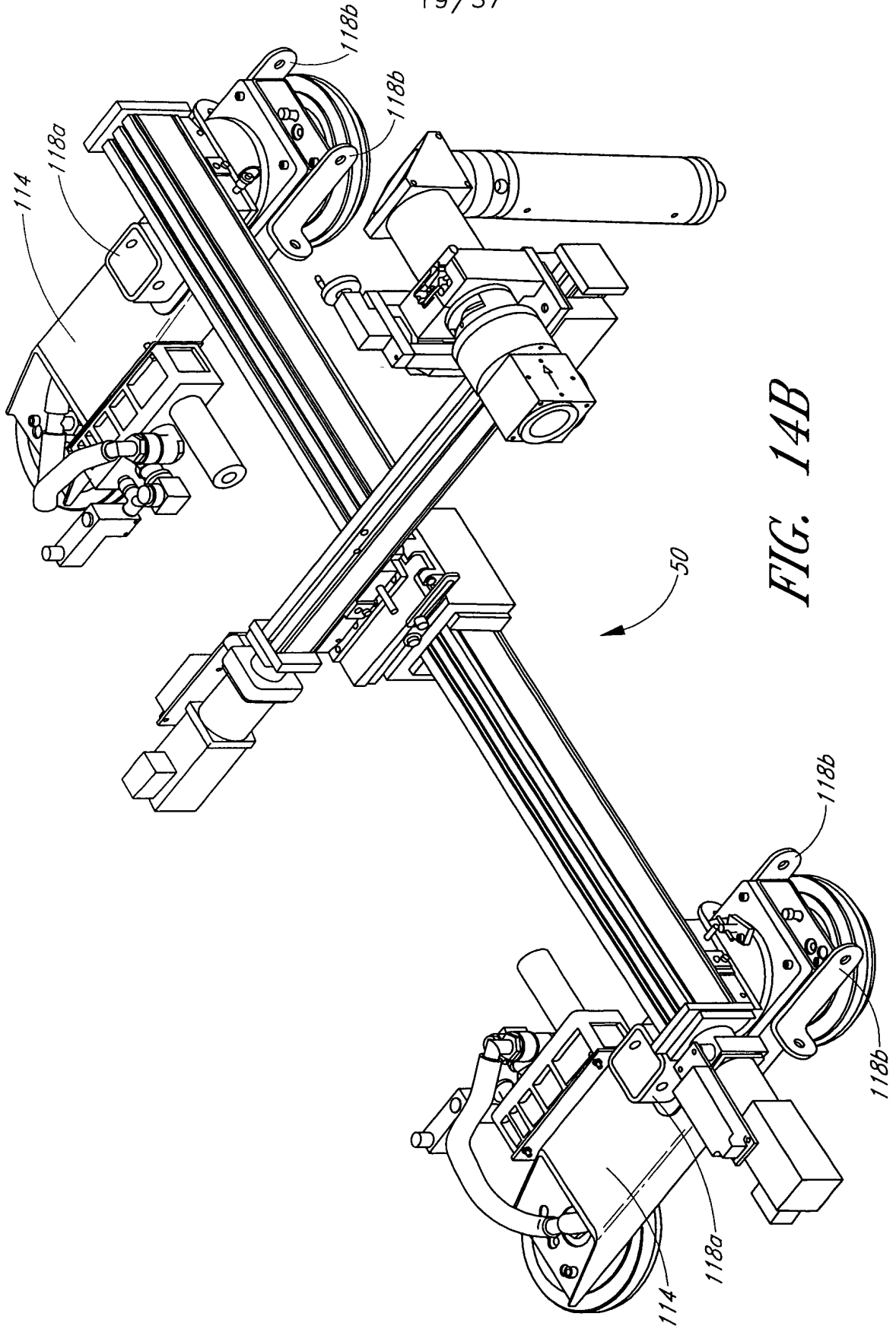


FIG. 14A



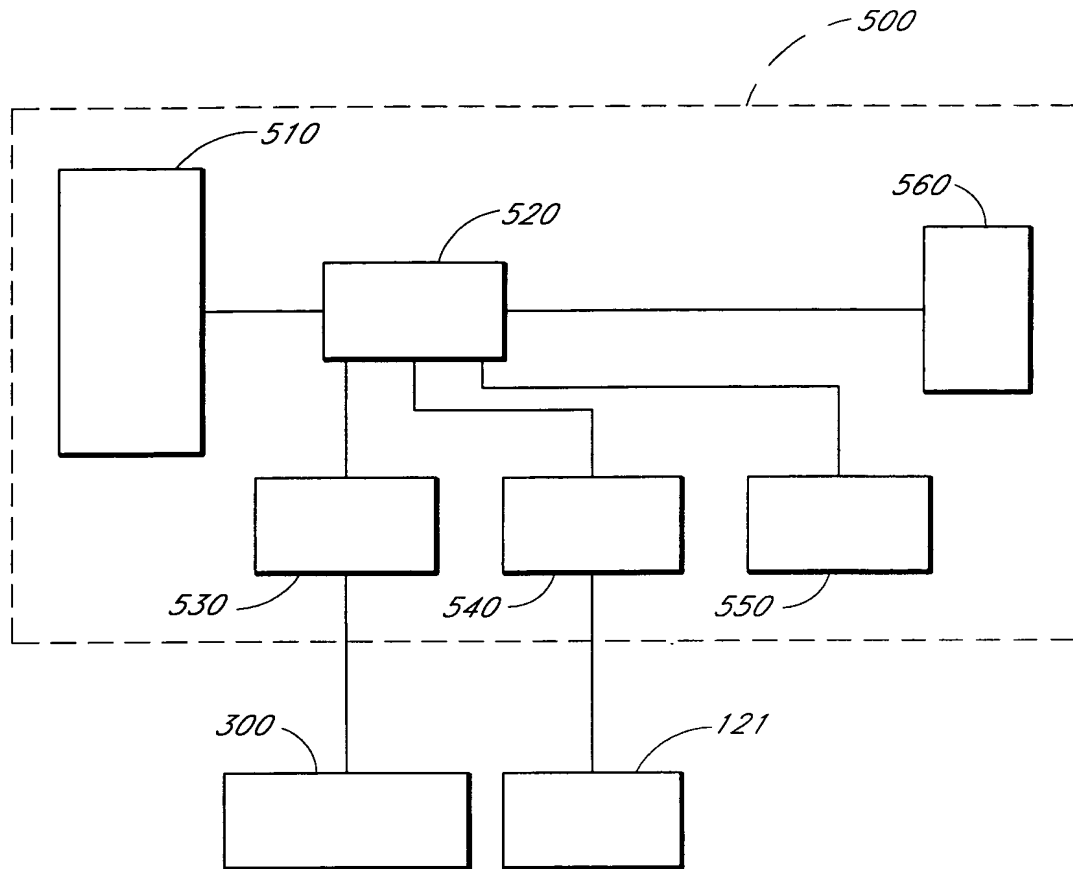


FIG. 15

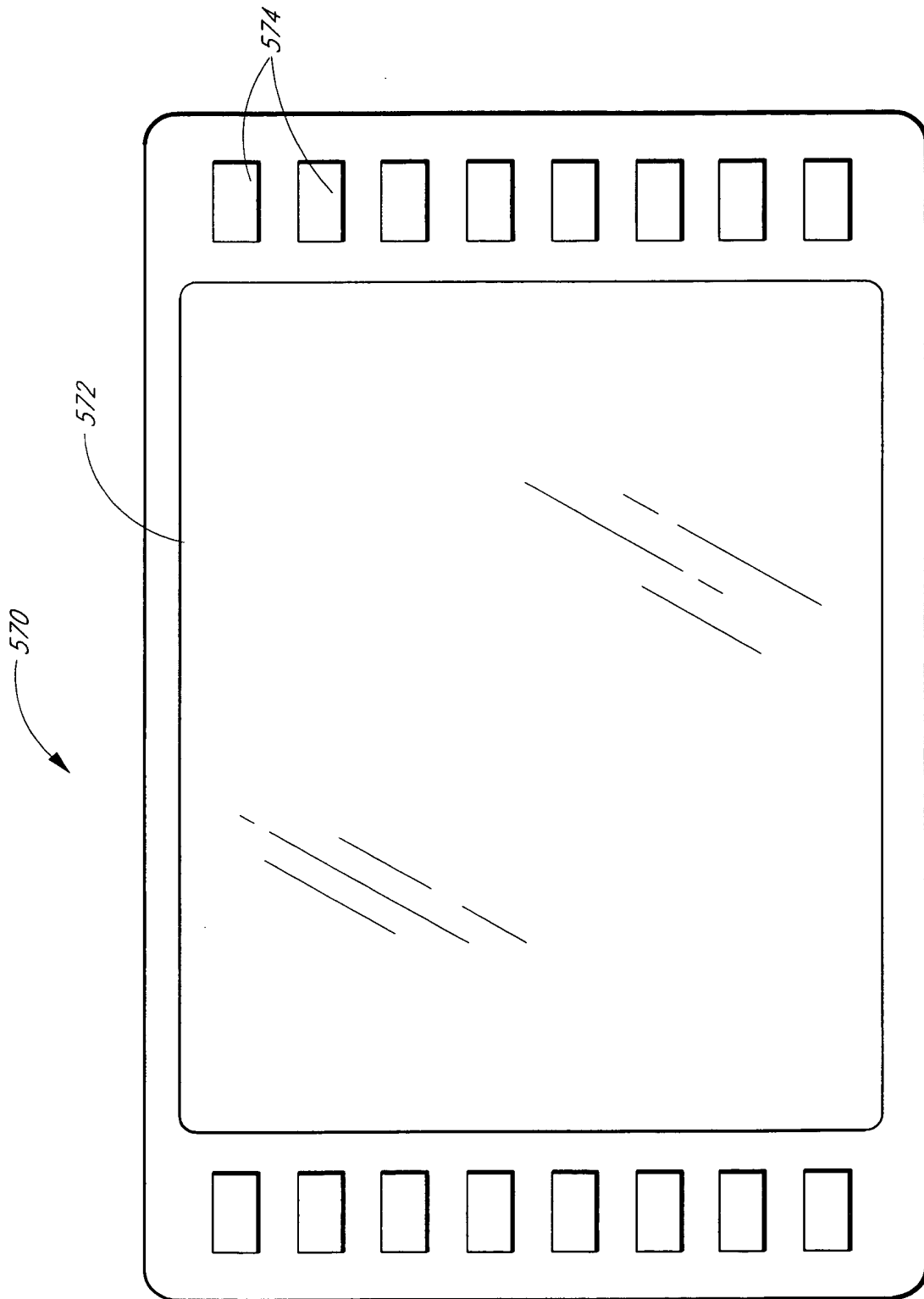


FIG. 16

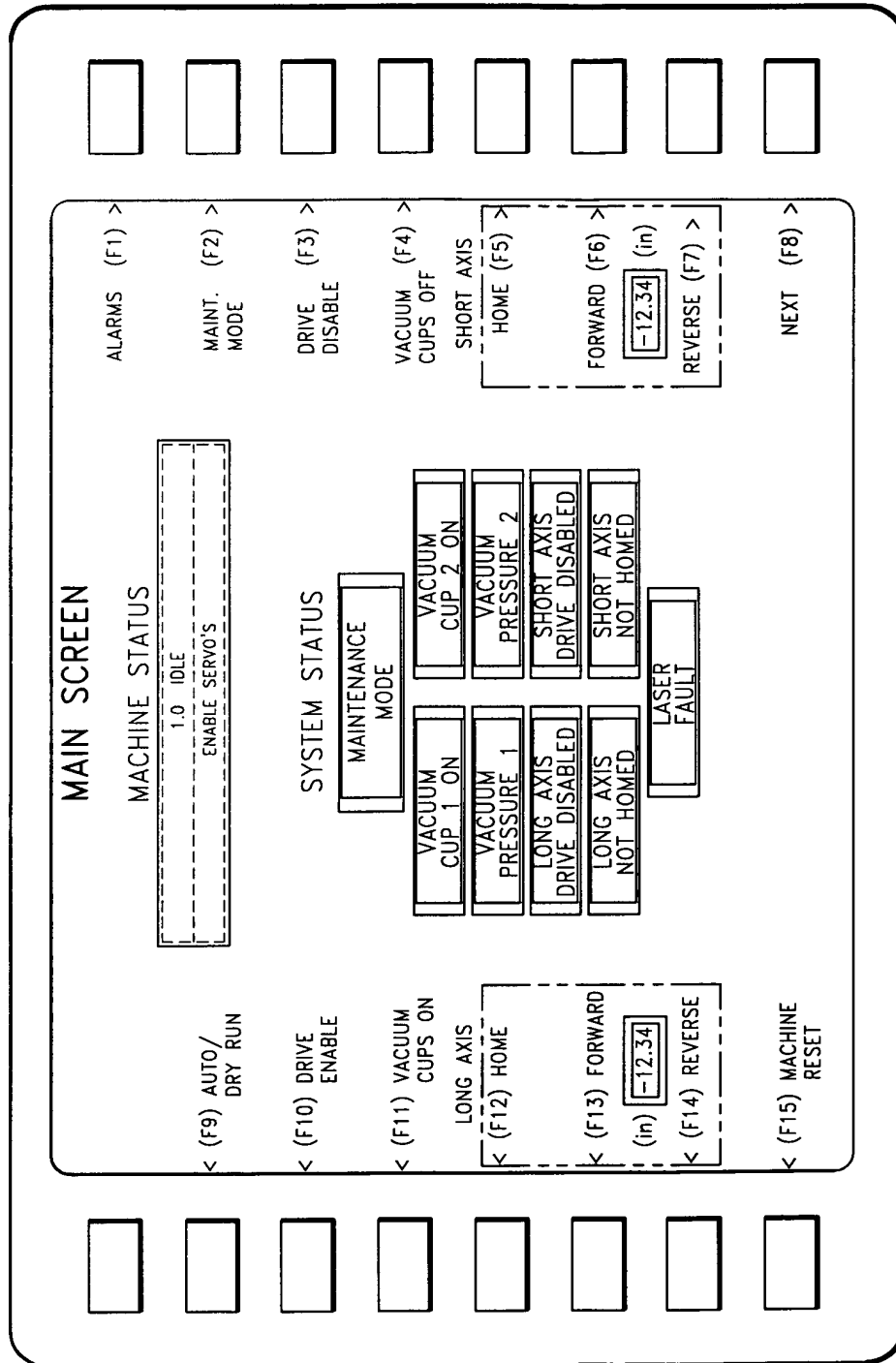


FIG. 17A

## SELECT OPERATION SCREEN

< (F9) AUTO/  
DRY RUN

< (F11) CIRCLE

< (F12) PIERCE

< (F13) STRAIGHT CUT

< (F14) SURFACE  
KEYING

< (F15) MACHINE  
RESET

MACHINE STATUS

1.0
IDLE

---

ENABLE SERVO'S

LONG AXIS  
POSITION

-12.34 (in)

SHORT AXIS  
POSITION

-12.34 (in)

SYSTEM STATUS

MAINTENANCE  
MODE

CIRCLE  
IDLE

PIERCE  
IDLE

STRAIGHT CUT  
IDLE

SURFACE KEYING  
IDLE

NEXT (F8) >

FIG. 17B





**PIERCE SETUP/OPERATION SCREEN**

< (F9) AUTO/  
DRY RUN

**MACHINE STATUS**

1.0 IDLE  
ENABLE SERVO'S

**PIERCE STATUS**

3.0 PIERCE SEQUENCE IDLE  
PRESS CYCLE START TO BEGIN

**SYSTEM STATUS**

MAINTENANCE  
MODE

**PIERCE PARAMETERS**

TIME (sec)

STATUS 1234

SET POINT 1234

LBU PROGRAM NUMBER

STATUS 12

SET POINT 12

< (F11) CYCLE  
START

LONG AXIS  
POSITION

-12.34 (in)

>

CYCLE (F4)  
STOP

SHORT AXIS  
POSITION

-12.34 (in)

>

NEXT (F8)

< (F15) MACHINE  
RESET

FIG. 17D

CUT SETUP/OPERATION SCREEN

MACHINE STATUS

1.0 IDLE  
ENABLE SERVO'S

CUT STATUS

4.0 CUT SEQUENCE IDLE  
PRESS CYCLE START TO BEGIN

SYSTEM STATUS

MAINTENANCE  
MODE

CUT PARAMETERS

LONG AXIS POSITION  
[-12.34] (in)

LONG AXIS  
STATUS [-12.34]  
SET POINT [-12.34]

SHORT AXIS POSITION  
[-12.34] (in)

SHORT AXIS  
STATUS [-12.34]  
SET POINT [-12.34]

LBU PROGRAM NUMBER

STATUS [12]  
SET POINT [12]

LONG AXIS  
NOT SELECTED

SHORT AXIS  
NOT SELECTED

CYCLE (F4) >  
STOP

NEXT (F8) >

FIG. 17E

**SURFACE KEYING SETUP/OPERATION SCREEN**

< (F9) AUTO/  
DRY RUN

MACHINE STATUS

1.0 IDLE

ENABLE SERVO'S

SURFACE KEYING STATUS

5.0 KEYING SEQUENCE IDLE

PRESS CYCLE START TO BEGIN

< (F11) CYCLE  
START

SYSTEM STATUS

MAINTENANCE  
MODE

SURFACE KEYING PARAMETERS

LONG AXIS  
POSITION

-12.34 (in)

SHORT AXIS  
POSITION

-12.34 (in)

LBU  
PROGRAM NUMBER

STATUS 12

SET POINT 12

STATUS -12.34

SET POINT -12.34

SPEED (in/min)

STATUS -12.34

SET POINT -12.34

STATUS -12.34

SET POINT -12.34

OFFSET (in)

STATUS -12.34

SET POINT -12.34

STATUS -12.34

SET POINT -12.34

LONG AXIS  
LENGTH (in)

STATUS -12.34

SET POINT -12.34

STATUS -12.34

SET POINT -12.34

NEXT (F8) >

CYCLE (F4) >  
STOP

< (F15) MACHINE  
RESET

FIG. 17F

**FAULT SCREEN**

RETURN (F1) >

ACK ALL (F3) >

NEXT (F8) >

< (F9) AUTO/ DRY RUN

< (F15) MACHINE RESET

**FIG. 17G.**

### MAINTENANCE SCREEN

WARNING:  
OPERATION FROM THIS SCREEN  
BYPASSES SYSTEM INTERLOCKS

SYSTEM STATUS

MAINTENANCE MODE

VACUUM CUP 1 ON

VACUUM PRESSURE 1

LONG AXIS DRIVE DISABLED

LASER AIR SOLENOID OFF

LONG AXIS NOT HOMED

VACUUM CUP 2 ON

VACUUM PRESSURE 2

SHORT AXIS DRIVE DISABLED

LASER AIR PRESSURE

SHORT AXIS NOT HOMED

JOG SPEED (in/min)

STATUS -12.34

SET POINT -12.34

ALARMS (F1) >

LASER AIR (F2) >  
ON/OFF

DRIVE (F3) >  
DISABLE

VACUUM (F4) >  
CUPS OFF

SHORT AXIS  
HOME (F5) >

FORWARD (F6) >  
-12.34 (in)

REVERSE (F7) >

NEXT (F8) >

< (F9) AUTO/  
DRY RUN

< (F10) DRIVE  
ENABLE

< (F11) VACUUM  
CUPS ON

LONG AXIS  
< (F12) HOME

< (F13) FORWARD  
(in) -12.34

< (F14) REVERSE

< (F15) MACHINE  
RESET

FIG. 17H

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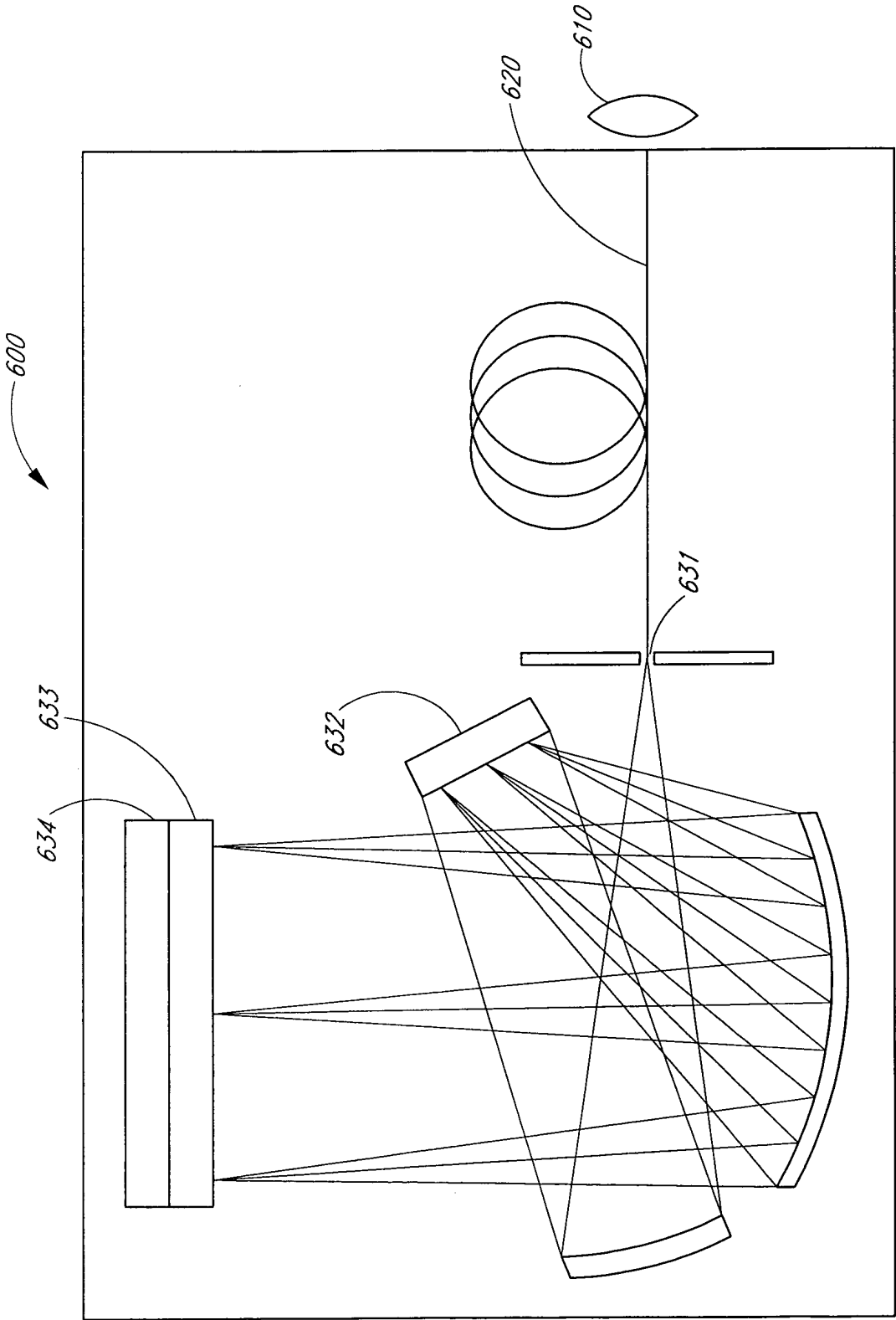


FIG. 18A

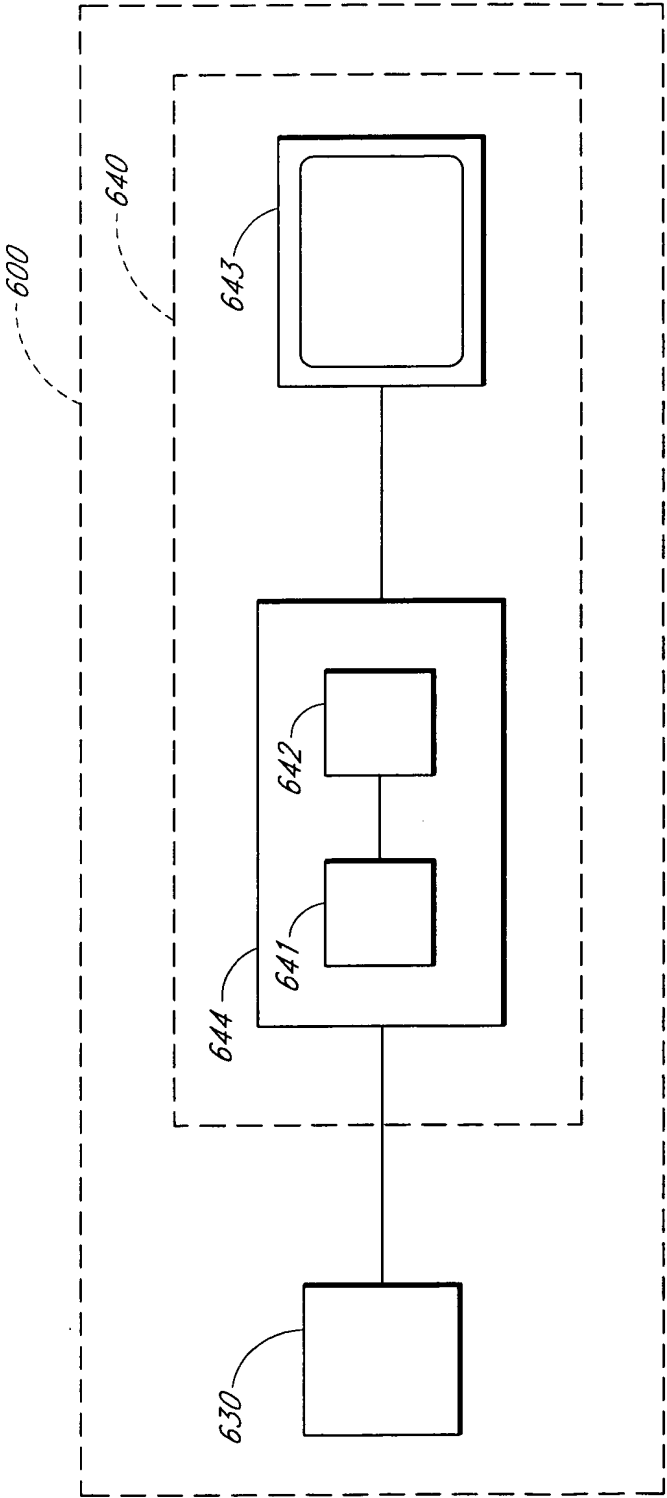


FIG. 18B

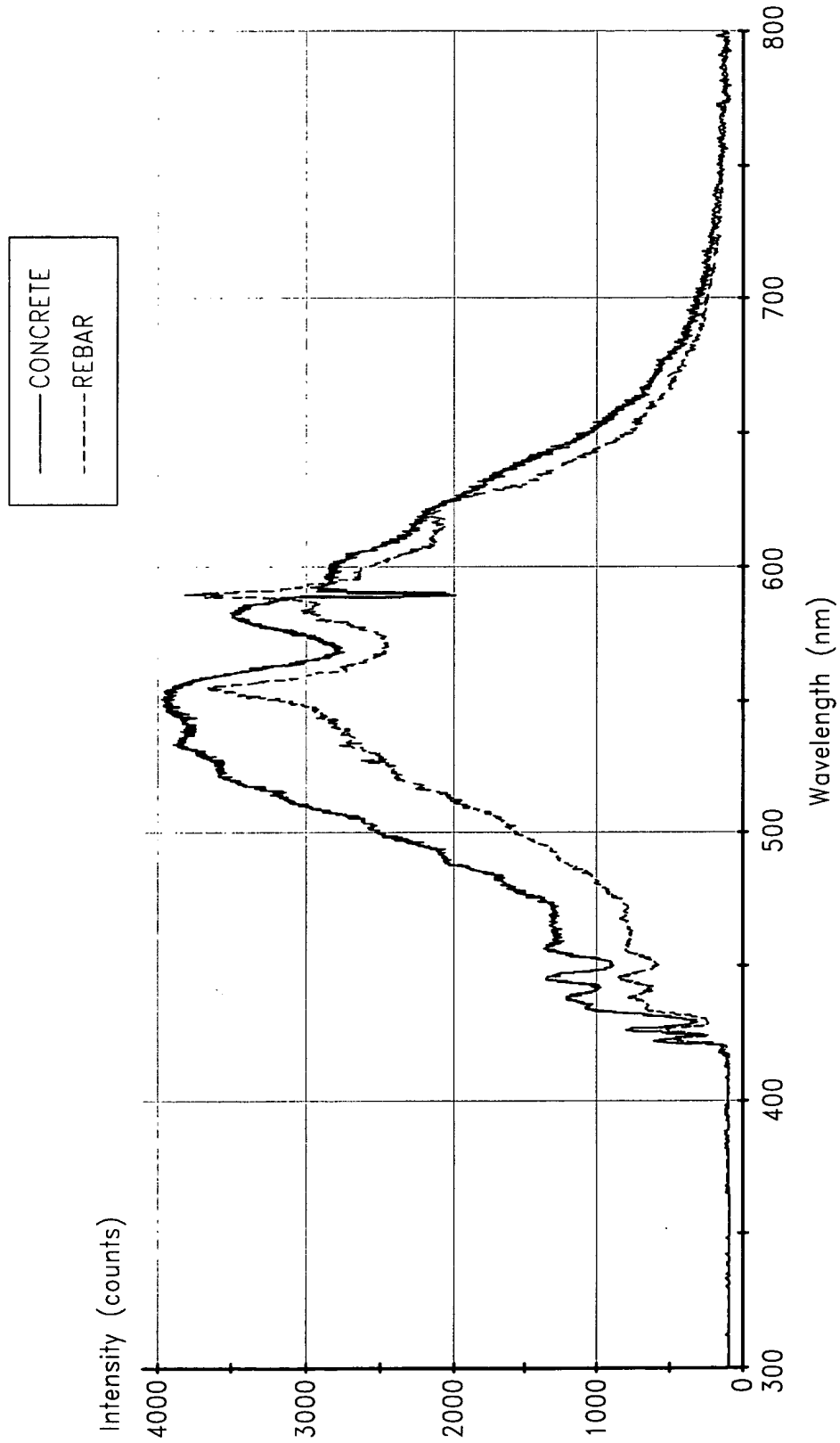


FIG. 19



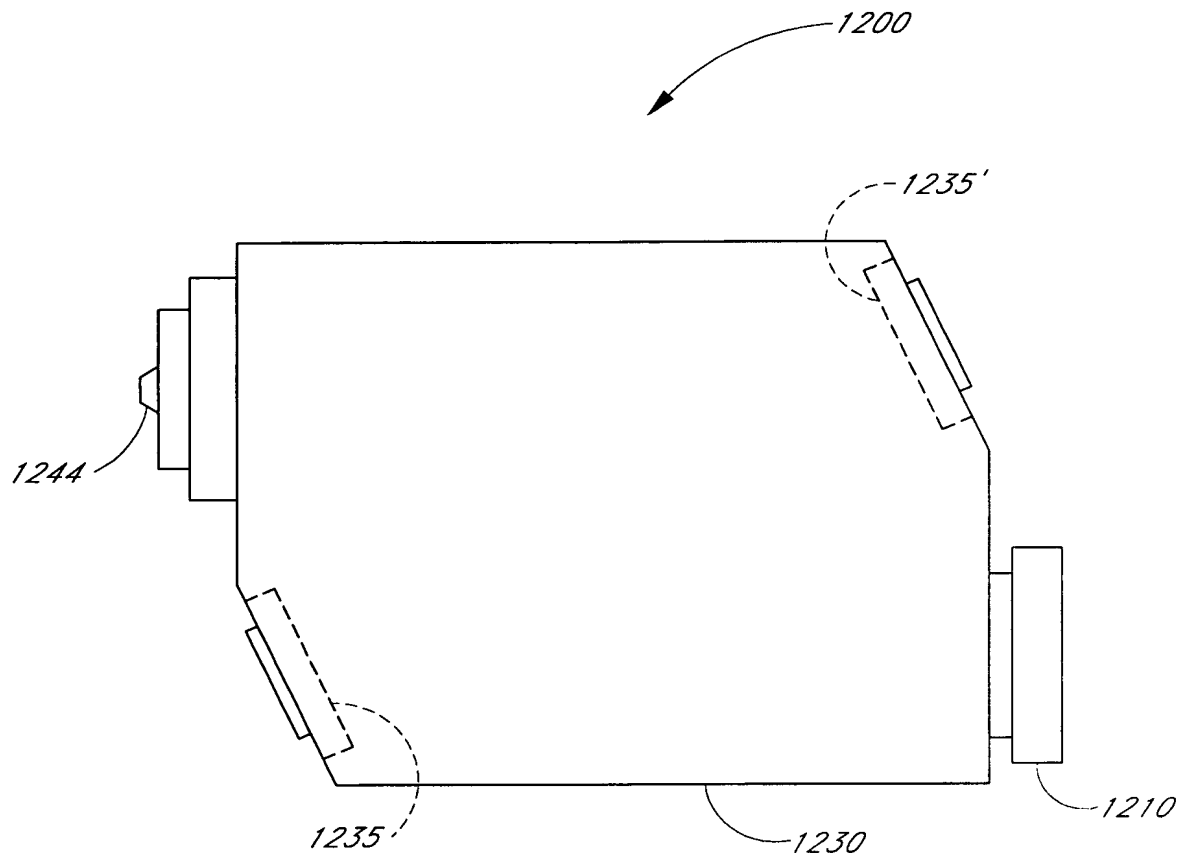


FIG. 20

FIG. 21A

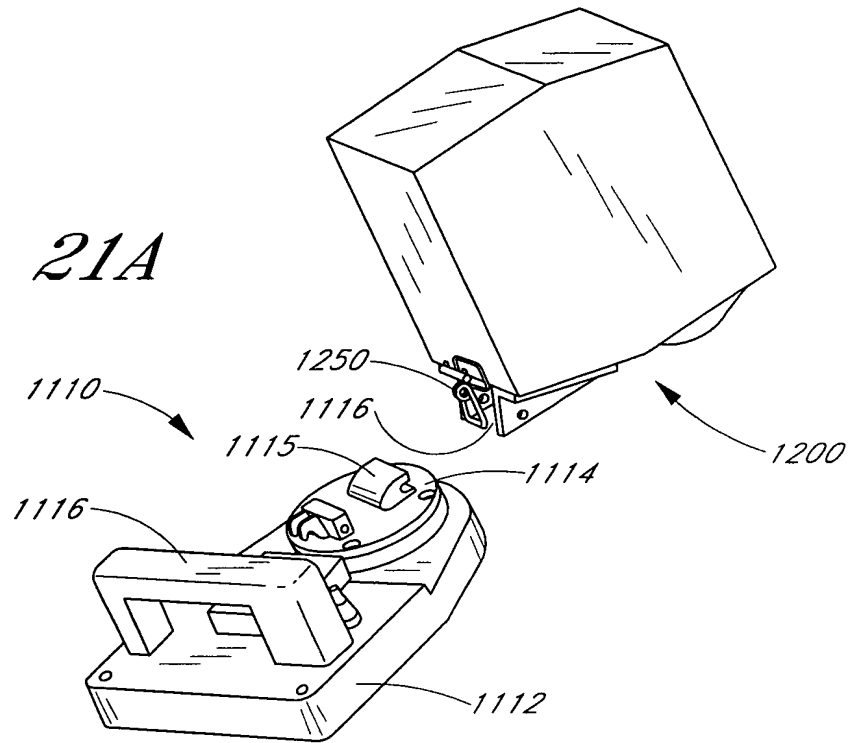
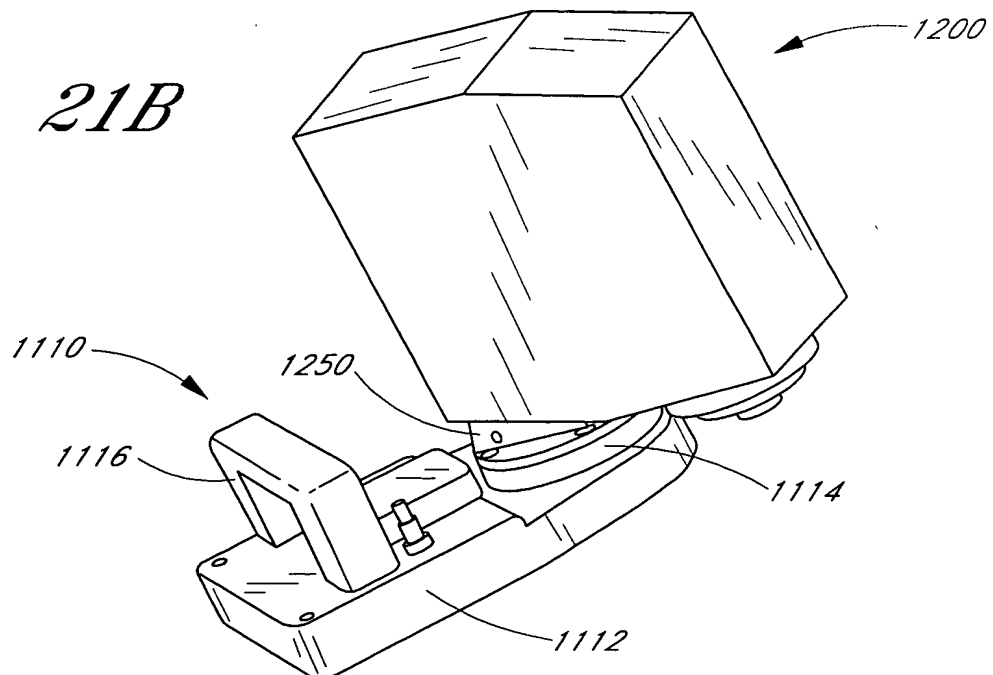


FIG. 21B



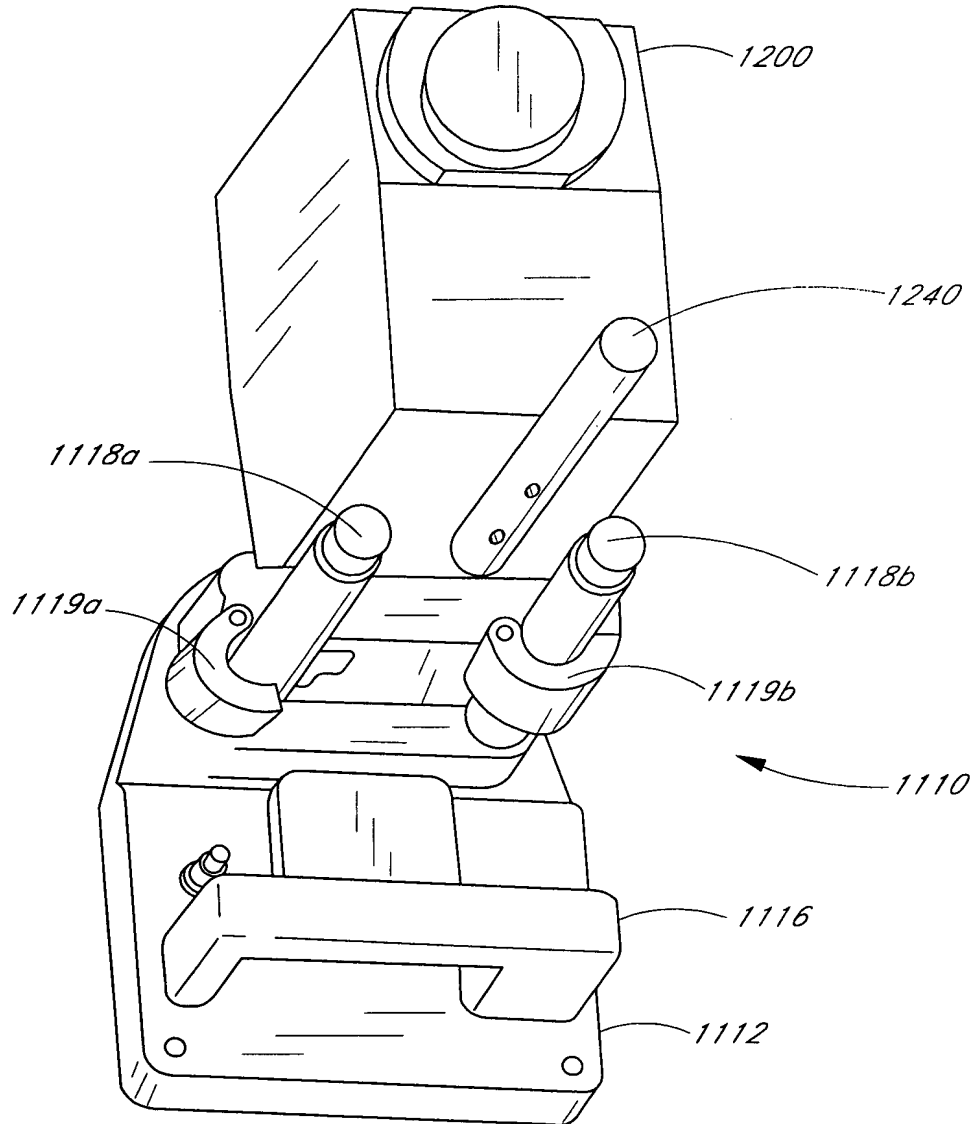


FIG. 21C

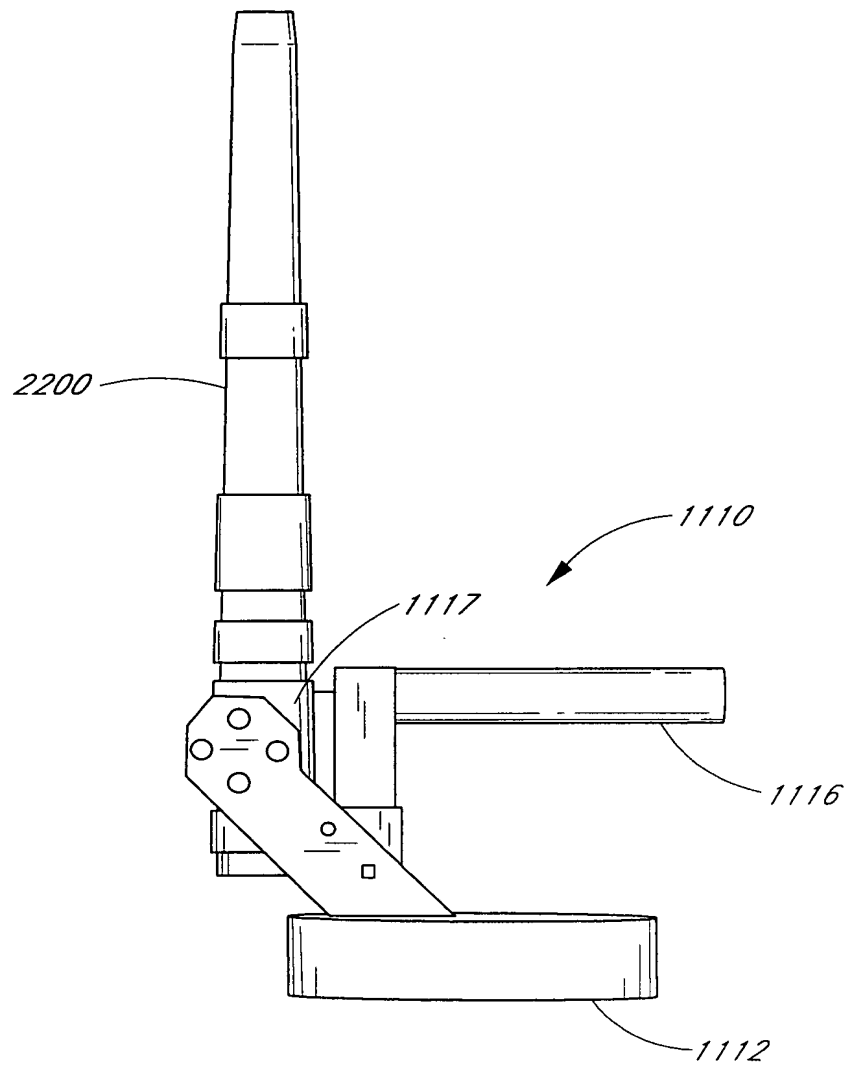


FIG. 21D

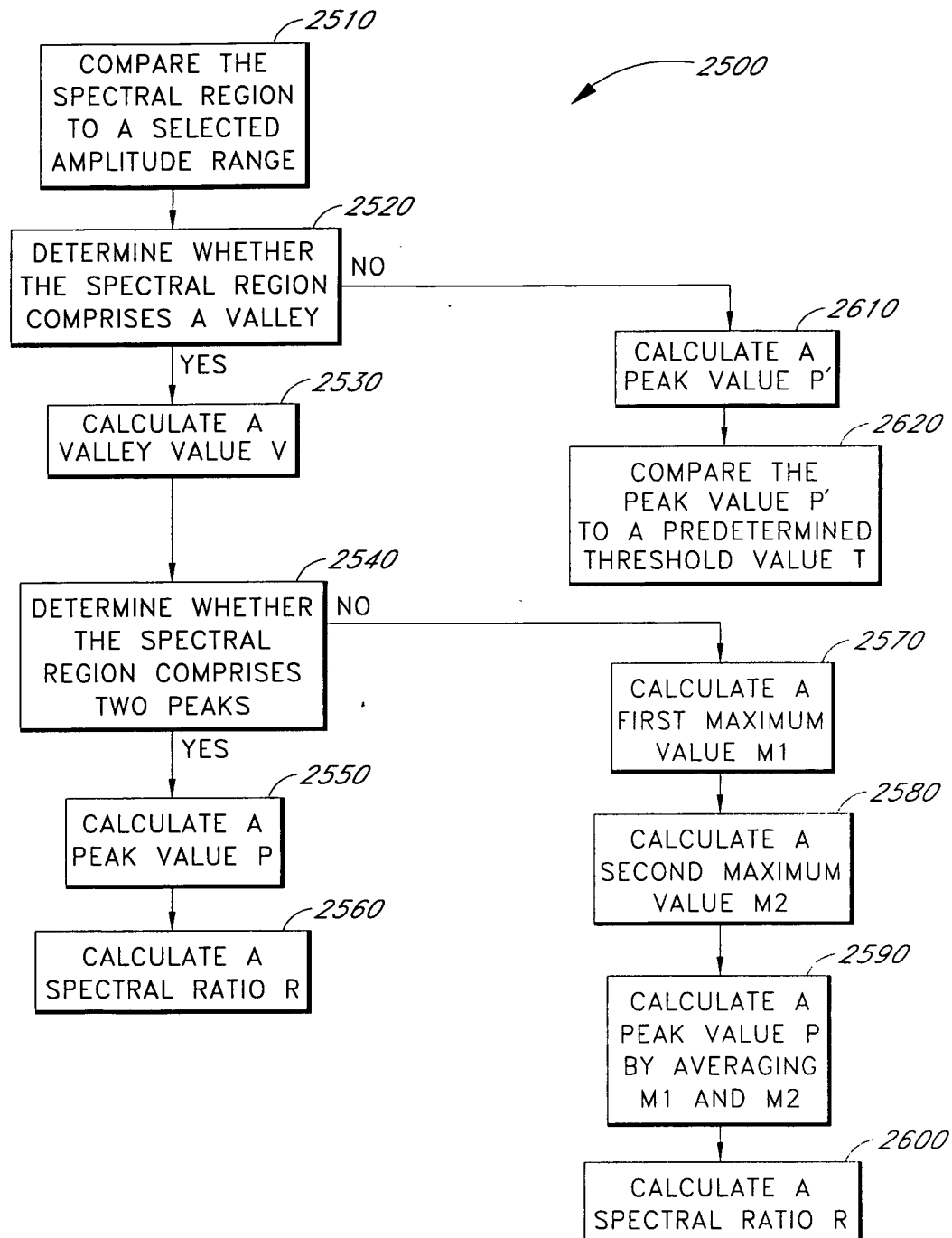


FIG. 22